

IN THE CLAIMS:

Claim 9 has been cancelled. Claims 20 – 22 have been added. Claims 1, 6, 11, and 17 have been amended, as follows:

1. (currently amended) A sound processing method comprising the steps of:  
separating an input audio signal of at least one system into a plurality of separated signal components corresponding respectively to a plurality of different types of sound sources, the input audio signal containing an ambient sound component and an on-the-spot speech sound component, [[and]] at least part of the plurality of the separated signal components including the ambient sound component and the on-the-spot speech component, the separating of the input audio signal including:

extracting a frequency component of an on-the-spot speech sound from the input audio signal,

identifying the frequency component of the on-the-spot speech sound from the input audio signal,

estimating a frequency component of an ambient sound from the input audio signal,

obtaining the on-the-spot speech sound component by subtracting the frequency component estimated for the ambient sound from the frequency component identified for the on-the-spot speech sound, and

obtaining the ambient sound component by subtracting the on-the-spot speech sound component from the audio input signal;

subjecting each of the ambient sound component and the on-the-spot speech component of at the least part of the plurality of separated signal components to

individual sound processing ~~suitable for the signal component~~, the sound processing of the ambient sound component including sound field control processing for creating a spatial impression of sound with a presence; and

outputting the plurality of separated signal components as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing.

2. (original) A sound processing method as claimed in claim 1, wherein said outputting step comprises synthesizing the plurality of separated signal components with the at least part thereof subjected to the individual sound processing into a synthesized audio signal, and outputting the synthesized audio signal.

3. (original) A sound processing method as claimed in claim 1, wherein said outputting step comprises outputting the plurality of separated signal components with the at least part thereof subjected to the individual sound processing, separately as audio signals.

Claims 4 - 5 (cancelled).

6. (currently amended) A sound processing apparatus comprising:

a signal separator that separates an input audio signal of at least one system into a plurality of separated signal components corresponding respectively to a plurality of different types of sound sources, the input audio signal containing an ambient sound component and an on-the-spot speech sound component, ~~[[and]]~~ at least part of the plurality of separated signal components including the ambient sound component and the on-the-speech sound component, the signal separator including:

a harmonic component extraction part that extracts a frequency of

on-the-spot speech sound from a frequency domain signal component of the input audio signal supplied thereto,

a sound source identification part that identifies a frequency component of the on-the-spot speech sound from the frequency domain signal component of the input audio signal supplied thereto,

an ambient sound spectrum envelope estimation part that estimates a frequency component of ambient sound of the input audio signal,

a spectrum subtraction part that obtains an on-the-spot speech sound component by subtracting the frequency component estimated by the ambient sound spectrum envelope estimation part from the frequency component output from the sound source identification part, and

a spectrum subtraction part that obtains an ambient sound component by subtracting the on-the-spot speech component from the input audio signal supplied thereto;

a sound processor that subjects each of the ambient sound component and the on-the-spot speech sound component of the at least part of the plurality of separated signal components to individual sound processing suitable for the signal component, the sound processing on the ambient sound component including sound field control processing for creating a spatial impression of a sound with a presence; and

an output controller that outputs the plurality of separated signal components as at least one audio signal after each signal component of the at least part thereof is subjected to the individual sound processing.

7. (original) A sound processing apparatus as claimed in claim 6, wherein said output controller synthesizes the plurality of separated signal components with the at least part thereof subjected to the individual sound processing into a synthesized audio signal, and outputs the synthesized audio signal.

8. (original) A sound processing apparatus as claimed in claim 6, wherein said output controller outputs the plurality of separated signal components with the at least part thereof subjected to the individual sound processing, separately as audio signals.

Claim 9 (cancelled).

10. (original) A sound processing apparatus as claimed in claim 6, wherein said signal separator comprises a plurality of signal enhancement/suppression devices that enhance part of a plurality of signal components contained in said input audio signal, and suppress remaining signal components.

11. (currently amended) A sound processing apparatus as claimed in claim 6, wherein said input audio signal comprises audio signals of a plurality of channels, and said signal separator comprises a plurality of signal separators corresponding respectively to said plurality of channels, and wherein each of said plurality of signal separators performs predetermined sound processing by supplementarily referring to at least one of the audio signals of at least one ~~[[other]]~~ channel~~[[s]]~~ other than a channel corresponding thereto, thereby improving accuracy of separation of the input audio signal of the corresponding channel into a plurality of separated signal components.

12. (original) A sound processing apparatus as claimed in claim 6, wherein said sound processor comprises a sound field controller that performs sound field control processing upon each signal component of the at least part of the plurality of separated

signal components.

13. (previously presented) A sound processing apparatus as claimed in claim 6, wherein said sound processor selectively eliminates at least part of the plurality of separated signal components, and in place thereof uses an externally input audio signal.

14. (original) A sound processing apparatus as claimed in claim 6, wherein said sound processor changes sound quality or voice quality of each signal component of at least part of the plurality of separated signal components.

15. (original) A sound processing apparatus as claimed in claim 6, wherein said sound processor changes pitch of each signal component of at least part of the plurality of separated signal components.

16. (previously presented) A sound processing apparatus as claimed in claim 6, wherein said sound processor changes speed relative to a time axis or speech speed of each signal component of at least part of the plurality of separated signal components.

17. (currently amended) A sound processing method comprising the steps of:  
separating an input audio signal of at least one system into a plurality of separated signal components corresponding respectively to a plurality of different types of sound sources, the input audio signal containing an ambient sound component and an on-the-spot speech sound component, at least part of the plurality of the separated signal components including the ambient sound component and the on-the-spot speech component,

the separating of the input audio signal including:

extracting a frequency component of an on-the-spot speech sound

from the input audio signal,

identifying the frequency component of the on-the-spot speech  
sound from the input audio signal,

estimating a frequency component of an ambient sound from the  
input audio signal,

obtaining the on-the-spot speech sound component by subtracting  
the frequency component estimated for the ambient sound from the  
frequency component identified for the on-the-spot speech sound, and

obtaining the ambient sound component by subtracting the on-the-spot  
speech sound component from the audio input signal;

subjecting the ambient sound component to individual sound processing ~~suitable~~  
~~for the signal component,~~ the sound processing of the ambient sound component  
including sound field control processing for creating a spatial impression of sound with a  
presence; and

outputting the plurality of separated signal components as at least one audio  
signal after each signal component of the at least part thereof is subjected to the  
individual sound processing.

18. (previously presented) A sound processing method as claimed in claim 17,  
wherein said outputting step includes synthesizing the plurality of separated signal  
components with the at least part thereof subjected to the individual sound processing  
into a synthesized audio signal, and outputting the synthesized audio signal.

19. (previously presented) A sound processing method as claimed in claim 17,  
wherein said outputting step includes outputting the plurality of separated signal

components with the ambient sound component being subject to the individual sound processing, separately as audio signals.

20. (new) The sound processing method of claim 1, wherein the ambient sound spectrum envelope estimation part estimates a power variation of frequency characteristics based on an instantaneous power of the input audio signal and instantaneous power of a high frequency band signal component, and obtains a mean spectrum envelope of the ambient sound component based on stored spectrum envelope information and a spectrum envelope of the ambient sound signal obtained when a speech signal is determined to be absent, thereby estimating the frequency component.

21. (new) The sound processing method of claim 17, wherein the ambient sound spectrum envelope estimation part estimates a power variation of frequency characteristics based on an instantaneous power of the input audio signal and instantaneous power of a high frequency band signal component, and obtains a mean spectrum envelope of the ambient sound component based on stored spectrum envelope information and a spectrum envelope of the ambient sound signal obtained when a speech signal is determined to be absent, thereby estimating the frequency component.

22. (new) The sound processing apparatus of claim 6, wherein the ambient sound spectrum envelope estimation part estimates a power variation of frequency characteristics based on an instantaneous power of the input audio signal and instantaneous power of a high frequency band signal component, and obtains a mean spectrum envelope of the ambient sound component based on stored spectrum

envelope information and a spectrum envelope of the ambient sound signal obtained when a speech signal is determined to be absent, thereby estimating the frequency component.